

NEW SPECIES OF HYDROPTILIDAE (TRICHOPTERA) FROM THE  
AMAZON REGION OF NORTHEASTERN PERU

S. C. HARRIS AND L. J. DAVENPORT

(SCH) Department of Biology, Clarion University, Clarion, PA 16214, U.S.A. (e-mail: harris@mail.clarion.edu); (LJD) Department of Biology, Samford University, Birmingham, AL 35229, U.S.A.

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*Abstract.*—Two new species of *Neotrichia*, *N. orejona* and *N. tirabuzona*, five new species of *Oxyethira*, *O. presilla*, *O. peruviana*, *O. vaina*, *O. picita*, and *O. hozosa*, and one new species of *Orthotrichia*, *O. shimigaya* are described from the upper Amazon region in Peru.

*Key Words:* Microcaddisflies, Trichoptera, Hydroptilidae, Peru, Neotropics, new species

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In 1992, Harris and Davenport described five new species of microcaddisflies from the Rio Sucusari and Rio Yanamono in the upper Amazon region of Peru (Fig. 1 in that paper). The collections were made in 1991 by Davenport during educational expeditions to the Explorama Lodge and the Explornapo Camp. Davenport made additional trips to the same region (as described in Harris and Davenport 1992) in January of 1993 and 1995. This paper reports on seven new species, two in the genus *Neotrichia*, one in the genus *Orthotrichia*, and four in the genus *Oxyethira*, from the most recent collections. An additional *Oxyethira* is described from an earlier collection in northern Peru.

Morphological terminology follows that of Marshall (1979). Length is measured from the top of the head to the wing tip and is given as a range with more than one specimen. Type material is deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (NMNH), and in the collection of the senior author (SCH).

*Neotrichia orejona* Harris and  
Davenport, new species  
(Fig. 1)

*Diagnosis.*—In many respects, this species is similar to *N. yanomonoa* Harris and Dav-

enport, *N. cayada* Harris and *N. browni* Harris. All three share the elongate posterolateral extensions from the ninth abdominal segment and all have a hooklike phallic apex. The new species is readily separated by the triangular inferior appendages, the bifid subgenital plate and the serrated phallic processes.

*Male.*—Length 1.3 mm. Antenna with 18 segments. Brown in alcohol. Abdominal segment VIII annular. Segment IX in lateral view with narrow, elongate process from posterolateral margin; in ventral view with elongate, narrow lobes laterally, mesally with pair of thin, elongate processes each bearing small seta at apex. Segment X fused with IX, in dorsal view deeply incised mesally, pair of small setiferous lobes anteriorly. Inferior appendages triangular in lateral view, apex truncate bearing numerous setae; in ventral view rectanguloid, curving mesad. Subgenital plate beaklike in lateral view with narrow seta-bearing process dorsally; wide basally in ventral aspect with bifid processes, narrowing posteriorly. Phallus tubular, apex divided into two flattened serrate processes, ejaculatory duct protruding subapically, thin paramere encircling shelf near midlength.

*Female.*—Unknown.

*Type material.*—Holotype, ♂. Peru, Lor-

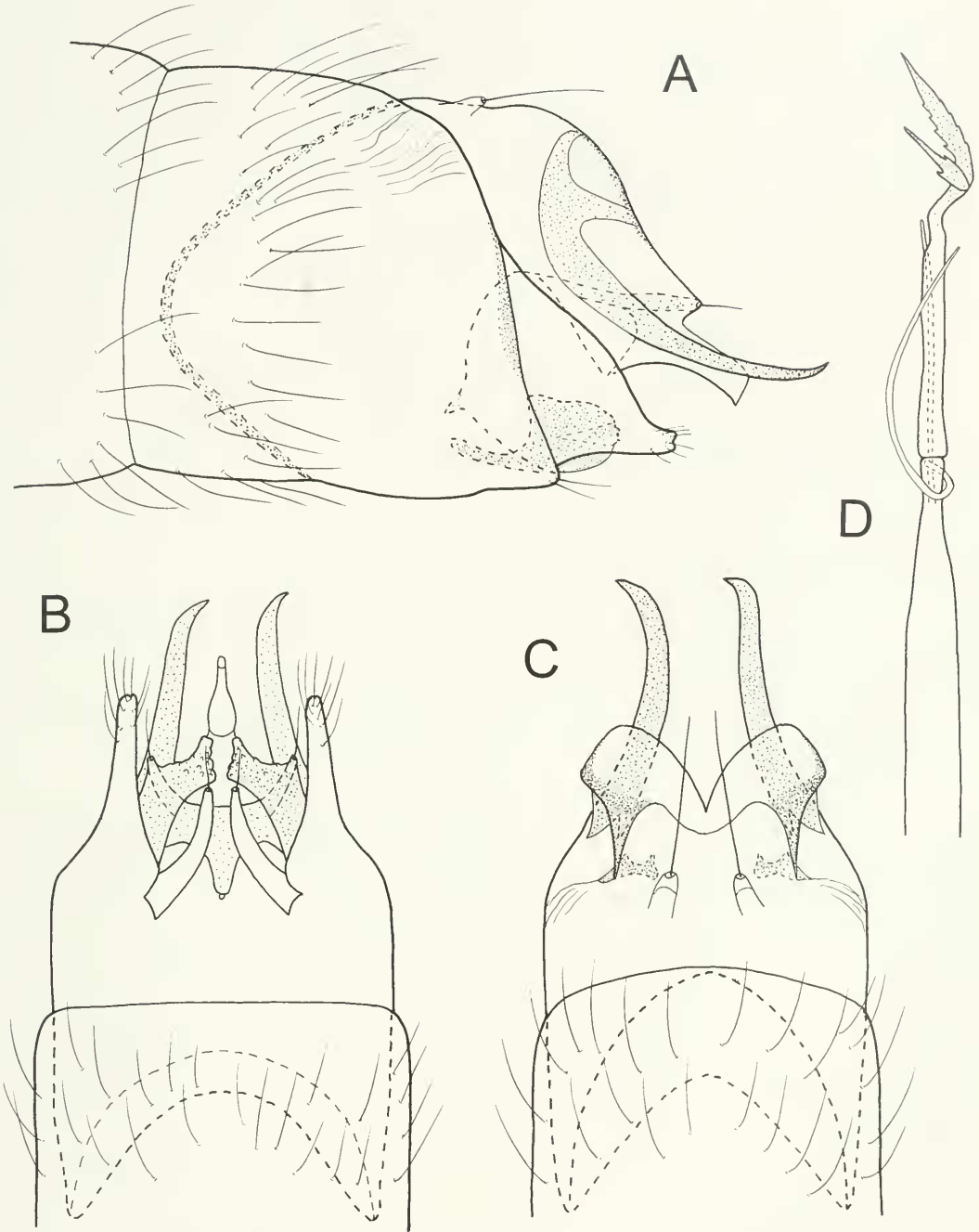


Fig. 1. *Neotrichia orejona*, male genitalia. A. Lateral. B. Ventral. C. Dorsal. D. Phallus, dorsal.

eto, edge of Rio Sucusari backwater, adjoining Explornapo Camp, 16 January 1993, L. J. Davenport (NMNH).

**Etymology.**—Named for the Orejone indians which live in the area.

***Neotrichia tirabuzona* Harris and Davenport, new species**

(Fig. 2)

**Diagnosis.**—This new species falls within the *caxima* group, as established by Mar-

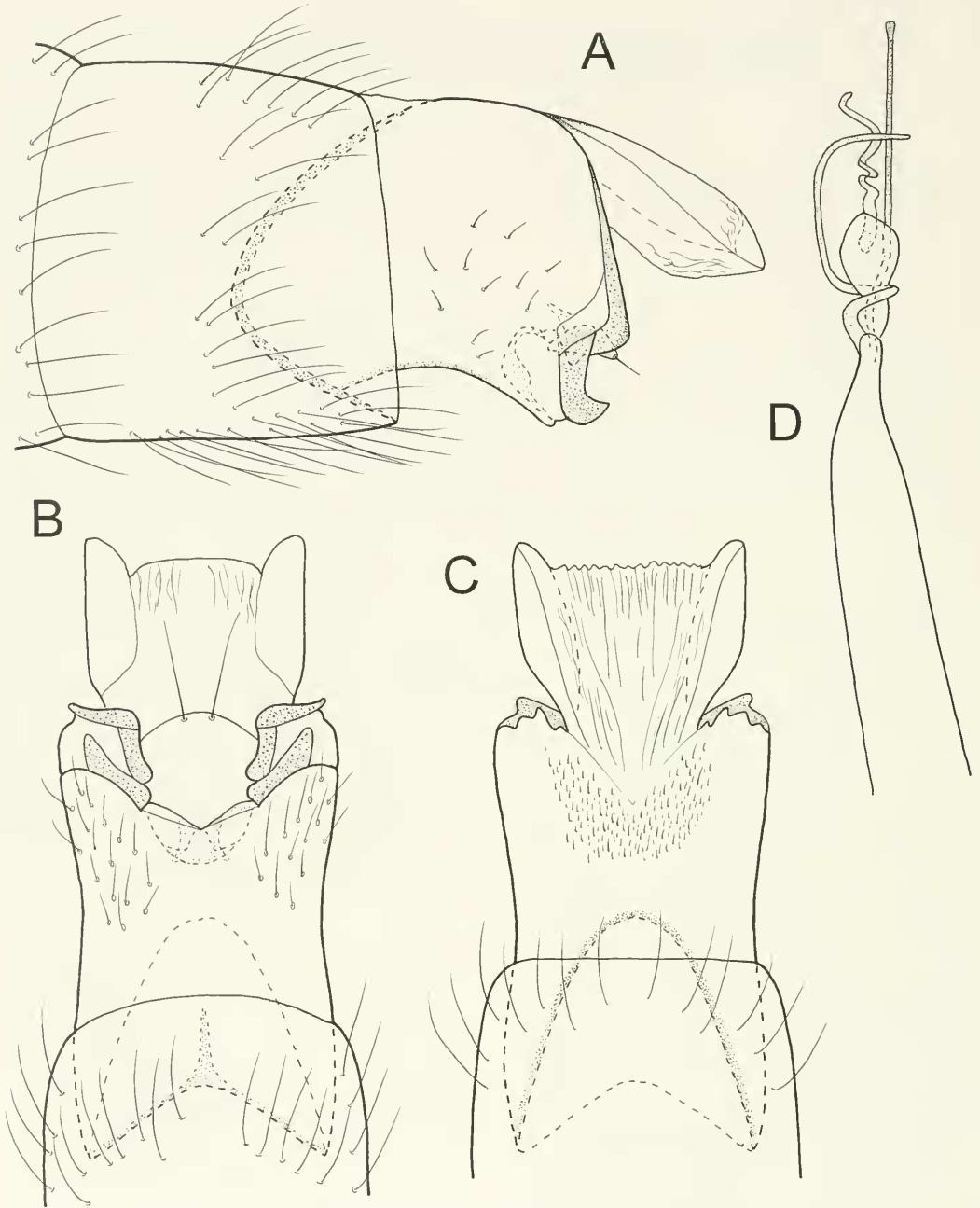


Fig. 2. *Neotrichia tirabuzona*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, dorsal.

shall (1979), with greatest similarity to *N. rotundata* Flint and *N. dientera* Harris. The hooklike inferior appendages and spiral process from the phallus apex are characteristic for *N. tirabuzona*.

Male.—Length 1.5–1.7 mm. Antenna

with 18 segments. Brown in alcohol. Abdominal segment VIII annular. Segment IX in lateral view square, curving ventrally to posteroventral projection; in ventral view square, emarginate on posterior and anterior margins. Segment X lobate in lateral view;

in dorsal view partially fused with IX at narrow base, widening distally with truncate incision apically. Inferior appendages hook-shaped in lateral view; in ventral view square and widely separated, sclerotized bands basally, posteriorly, and mesally. Subgenital plate a narrow shelf in lateral view; in ventral view rounded distally, pair of elongate setae mesally. Phallus wide at base and at rounded apex, spiral process apically, ejaculatory duct thin and elongate, protruding apically, elongate paramere encircling shaft beyond midlength.

Female.—Unknown.

Type material.—Holotype, ♂. Peru, Loreto, edge of Rio Sucusari backwater, adjoining Explornapo Camp, 16 January 1993, L. J. Davenport (NMNH). Paratypes, Peru, same data as holotype, 7 ♂ (NMNH, SCH).

Etymology.—Spanish, corkscrew, referring to the spiral process from the phallus apex.

***Orthotrichia shimigaya* Harris and  
Davenport, new species**  
(Fig. 3)

Diagnosis.—The genus *Orthotrichia* is represented by six species in the Nearctic region, with two, *O. aegerfasciella* (Chambers) and *O. cristata* (Morton), extending into the Neotropical region. *Orthotrichia shimigaya* is the first species of the genus to be reported exclusively from South America. The species is easily recognized by the structure of the inferior appendages.

Male.—Length 2.5–2.6 mm. Antenna with 32 segments. Brown in alcohol. Abdominal segment VII with elongate posteromesal process from venter. Segment VIII annular. Segment IX reduced ventrally to narrow bridge, a rounded lobe posteroventrally; in dorsal view incised posterolaterally, mesally a truncate lobe. Segment X in lateral view divided into pair of thin, elongate processes, turned laterad at apex; in ventral view, narrowly incised on posterolateral margin, left lobe wider and more truncate than right. Inferior appendages in

lateral view short and triangular; in ventral view asymmetrical, left appendage with pair of thin, seta-bearing processes from posterolateral margin, right appendage narrowing mesad and curving downward, single seta-bearing process from posterolateral margin. Subgenital plate in lateral view a narrow shelf; in ventral view tongue-like, pair of setae from rounded, posterior margin. Phallus tubular, apical half with ring-like crenulations, tipped with pair of narrow lateral lobes, paramere encircling shaft at midlength.

Female.—Unknown.

Type material.—Holotype, ♂. Peru, Loreto, small stream just outside grounds of Explorama Inn, 20 January 1995, L. J. Davenport (NMNH). Paratype, Peru, Loreto, backwater creek at outlet of Lake Shimigay, ca. 2 km. upstream Rio Napo from mouth of Rio Sucusari, 15 January 1993, L. J. Davenport, 1 ♂ (NMNH).

Etymology.—Named for Lake Shimigay, one of the type localities for the species.

***Oxyethira presilla* Harris and  
Davenport, new species**  
(Fig. 4)

Diagnosis.—This new species is most similar to *O. rareza* Holzenthal and Harris, with which it shares the asymmetrical genitalic features. The multiple processes at the apex of the phallus and the long looping processes from the venter of segment IX will readily identify *O. presilla*.

Male.—Length 2.2 mm. Antenna with 38 segments. Brown in alcohol. Abdominal segment VII annular, lacking posteromesal process from the venter. Segment VIII tapering posteriorly, deeply incised on posterior margin in ventral and dorsal views. Segment IX complex, elongate anteriorly and tapering posteriorly with several asymmetrical processes, ventrally divided into two processes, lowermost upturned at midlength and slightly widening, uppermost process thin, posteriorly curving into a loop; dorsal process narrow anteriorly, widening to transverse plate at midlength; in

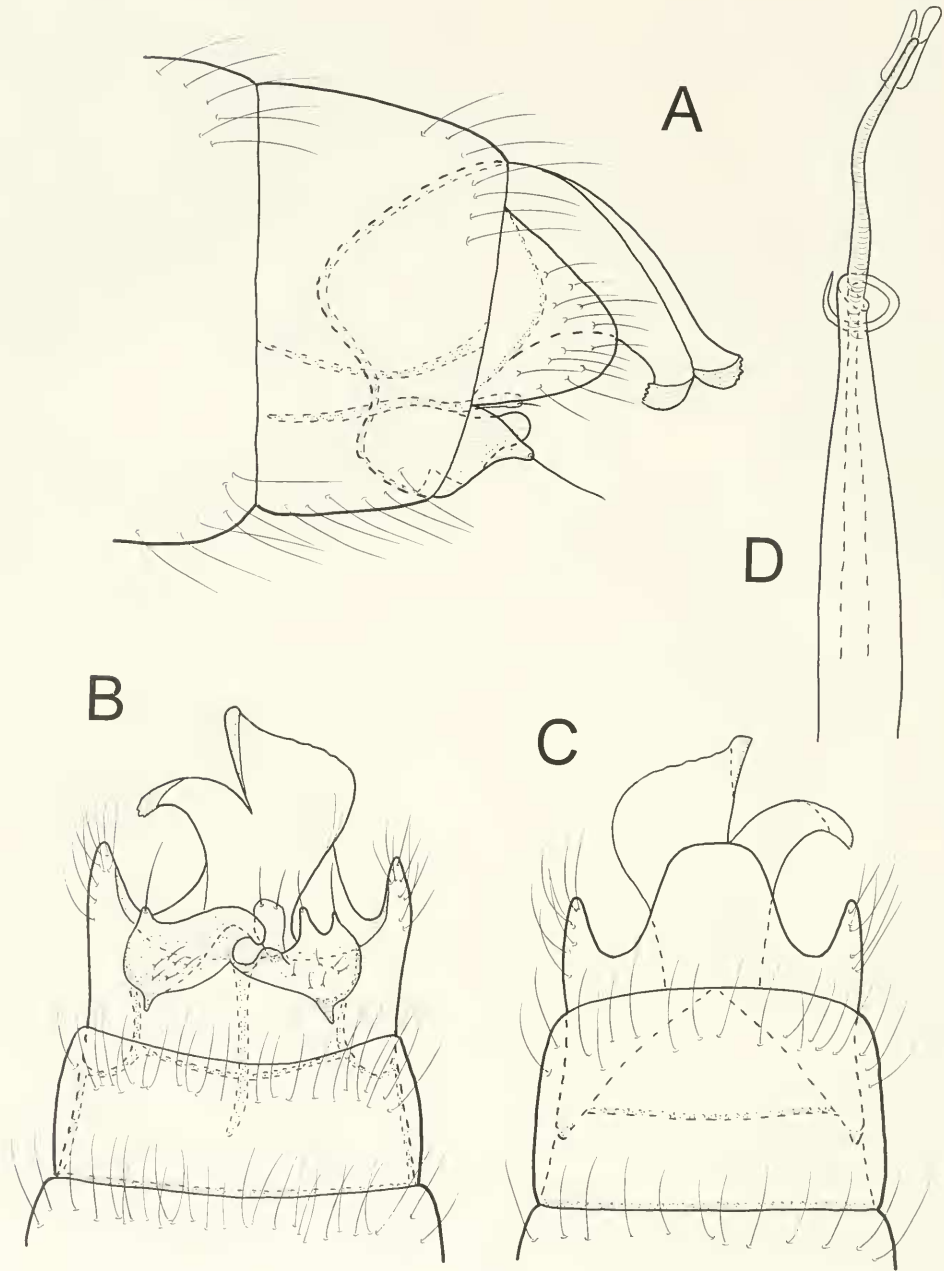


Fig. 3. *Orthotrichia shimigaya*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, dorsal.

ventral view deeply incised, right lateral margin with two processes, apical process narrow, subapical process wider and projecting more mesad, left lateral margin divided into two elongate thin processes. Ter-

gum X apparently fused with IX as apex of rectangular plate on IX. Inferior appendages and subgenital plate not evident. Phallus wide at base, narrowing at midlength, apical portion widening with several scler-



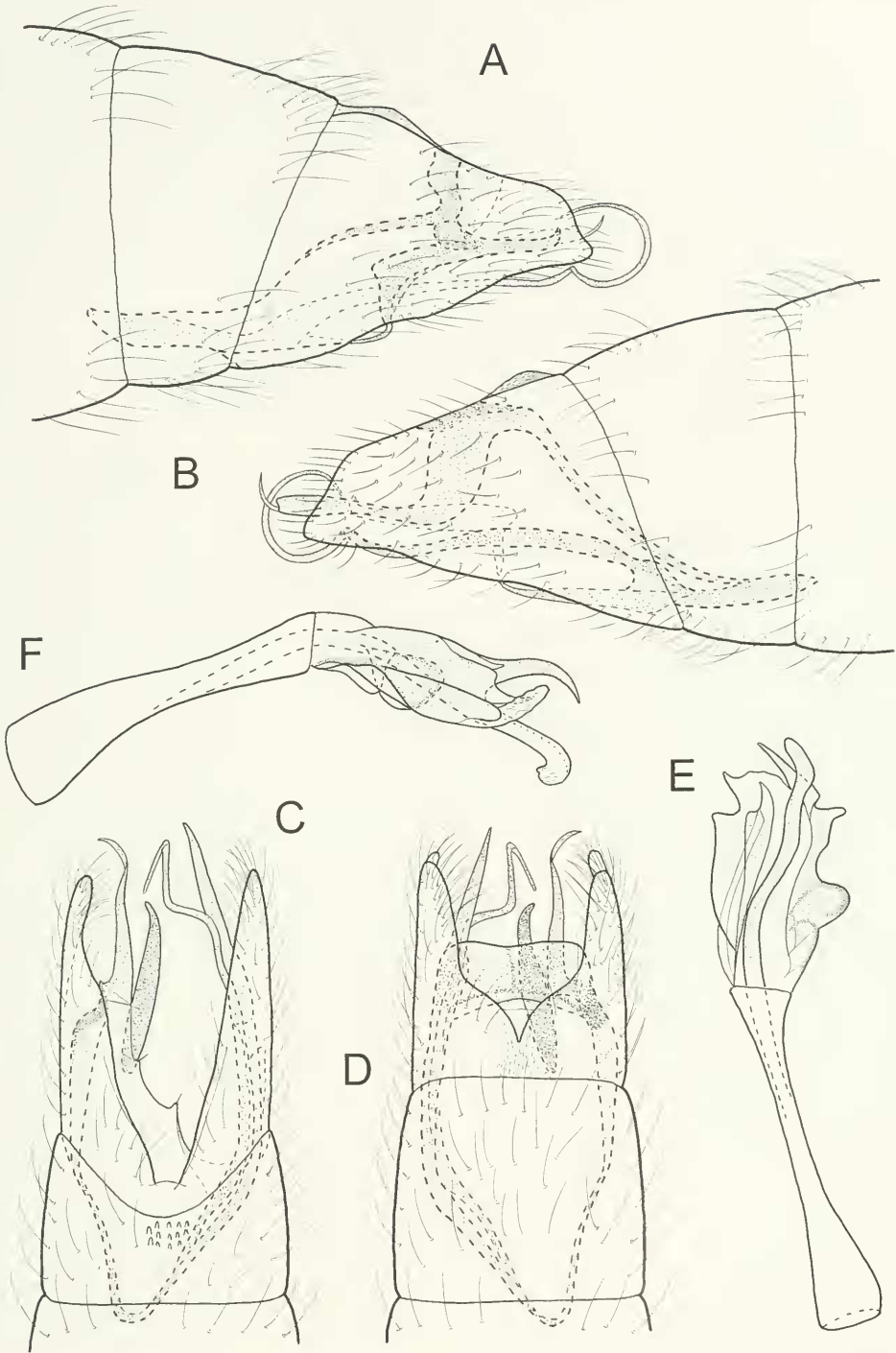


Fig. 4. *Oxyethira presilla*, male genitalia. A, Lateral, left side. B, Lateral, right side. C, Ventral. D, Dorsal. E, Phallus, dorsal. F, Phallus, lateral.

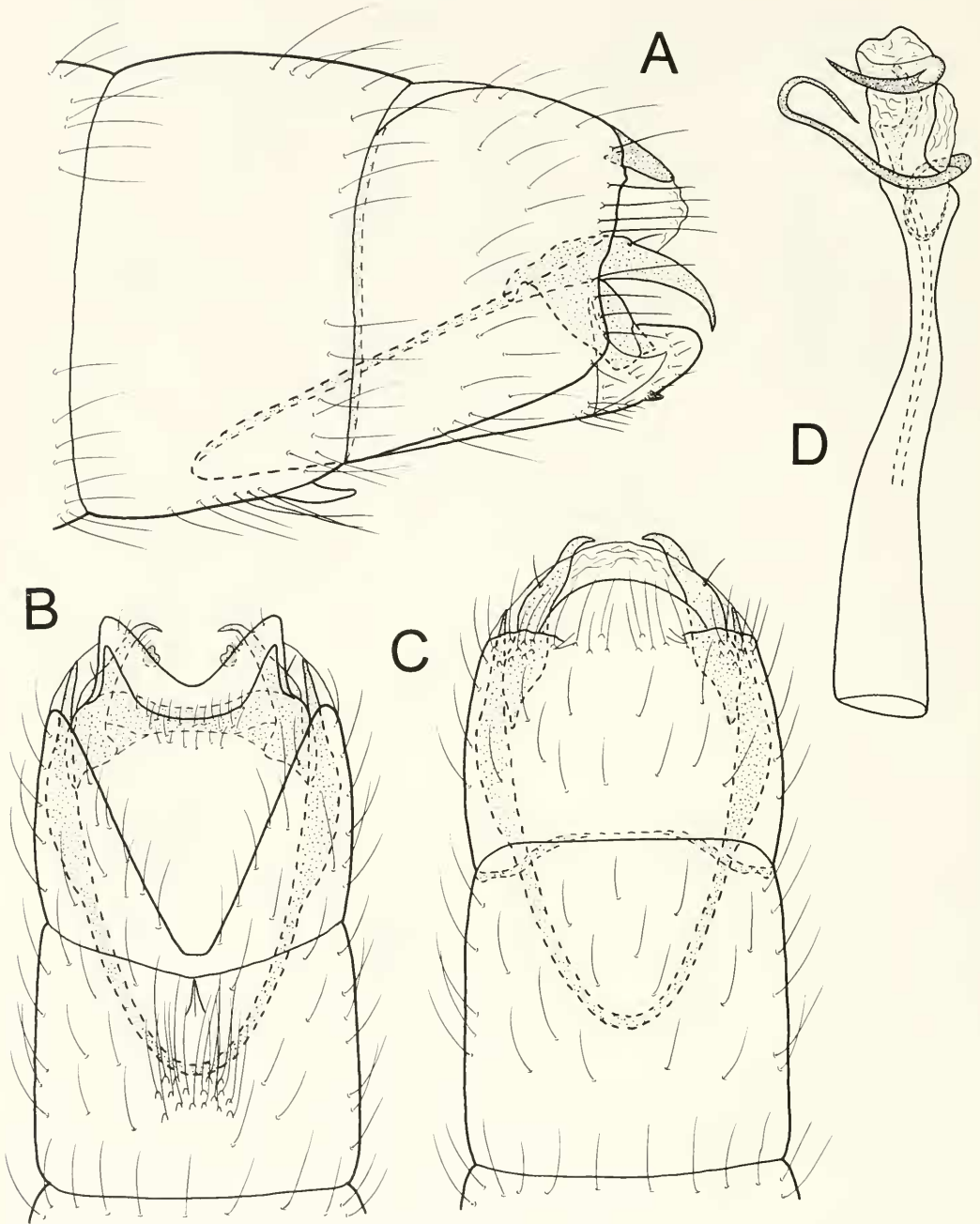


Fig. 5. *Oxyethira peruviana*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, dorsal.

otized processes on lateral margins, ejaculatory duct protruding distally as sclerotized, sinuate process.

Female.—Unknown.

Type material.—Holotype, ♂. Peru, Loreto, Yanamono Creek at jungle's edge, near Explorama Lodge, 12 January 1995, L. J. Davenport (NMNH).

**Etymology.**—Spanish, loop, referring to the distinctive process from segment IX.

***Oxyethira peruviana* Harris and Davenport, new species**

(Fig. 5)

**Diagnosis.**—This species appears to be most similar to *O. spissa* Kelley, a member of the *pallida* group of Kelley (1984). Both species have a prominent posterolateral process from segment IX and inconspicuous subgenital plate, but *O. peruviana* differs in the elongate processes from the phallus apex and the longer inferior appendages.

**Male.**—Length 2.3 mm. Antenna with 29 segments. Brown in alcohol. Abdominal segment VII annular with short posteromesal process from the venter. Segment VIII annular in lateral view; deeply incised posteriorly in ventral view; rounded posteriorly in dorsal view. Segment IX triangular in lateral view, greatly reduced dorsally, acute, downturned curved process posterolaterally, posteroventrally with short, triangular process; in ventral view, posterior margins with three processes, lateralmost thin and acute, ventromesal processes triangular, dorsomesal processes tapering and angled inward. Segment X a short, membranous lobe; in dorsal view wide and rounded posteriorly. Inferior appendages short and rounded in lateral view, short spine from venter; in ventral view fused mesally, triangular laterally with small bilobed sclerite from mesal margins. Subgenital plate rectangular and slanted posteroventrally in lateral view; in ventral view a narrow, transverse band; lacking bilobed process. Phallus tubular, widening at apex which bears an elongate paramere subapically and short, transverse process at apex; ejaculatory duct bifid at apex.

**Female.**—Unknown.

**Type material.**—Holotype, ♂. Peru, Loreto, tributary to Rio Yanamono at Explorama Lodge, 11 March 1991, L. J. Davenport (NMNH).

**Etymology.**—Named for the country of Peru.

***Oxyethira vaina* Harris and Davenport, new species**

(Fig. 6)

**Diagnosis.**—This new species is most similar to *O. orellanai* Harris and Davenport, a member of the *Tanytrichia* subgenus of Kelley (1984), which was also collected at the same locality on the Rio Sucusari. The new species is separated by the shorter anteroventral extension of segment IX and the triangular inferior appendages, which in ventral view are fused mesally.

**Male.**—Length 2.3 mm. Antenna with 28 segments. Brown in alcohol. Abdominal segment VII annular with short posteromesal process from the venter. Segment VIII tapering posteroventrally in lateral view; in ventral view deeply incised mesally on posterior margin; posterior margin of dorsum with mesal truncate incision. Segment IX reduced posterodorsally to narrow bridge, narrowing and extending anteriorly through segment VII. Tergum X lobate, membranous. Inferior appendages short and triangular in lateral view; fused in ventral view, round mesal incision creating thin triangles laterally, stout seta from apex, dorsal lobes along mesal margins. Subgenital plate in lateral view a narrow shelf with bilobed process curving over it posteriorly; in ventral view a narrow rectangle with thin lateral arms angled mesad, bilobed processes widely separated with setae at tips. Phallus tubular with lateral sheath, narrow sclerite running contiguous with ejaculatory duct.

**Female.**—Unknown.

**Type material.**—Holotype, ♂. Peru, Loreto, edge of Rio Sucusari backwater, adjoining Explornapo Camp, 16 January 1993, L. J. Davenport (NMNH).

**Etymology.**—Spanish, sheath, referring to the lateral ribbonlike band of the phallus.



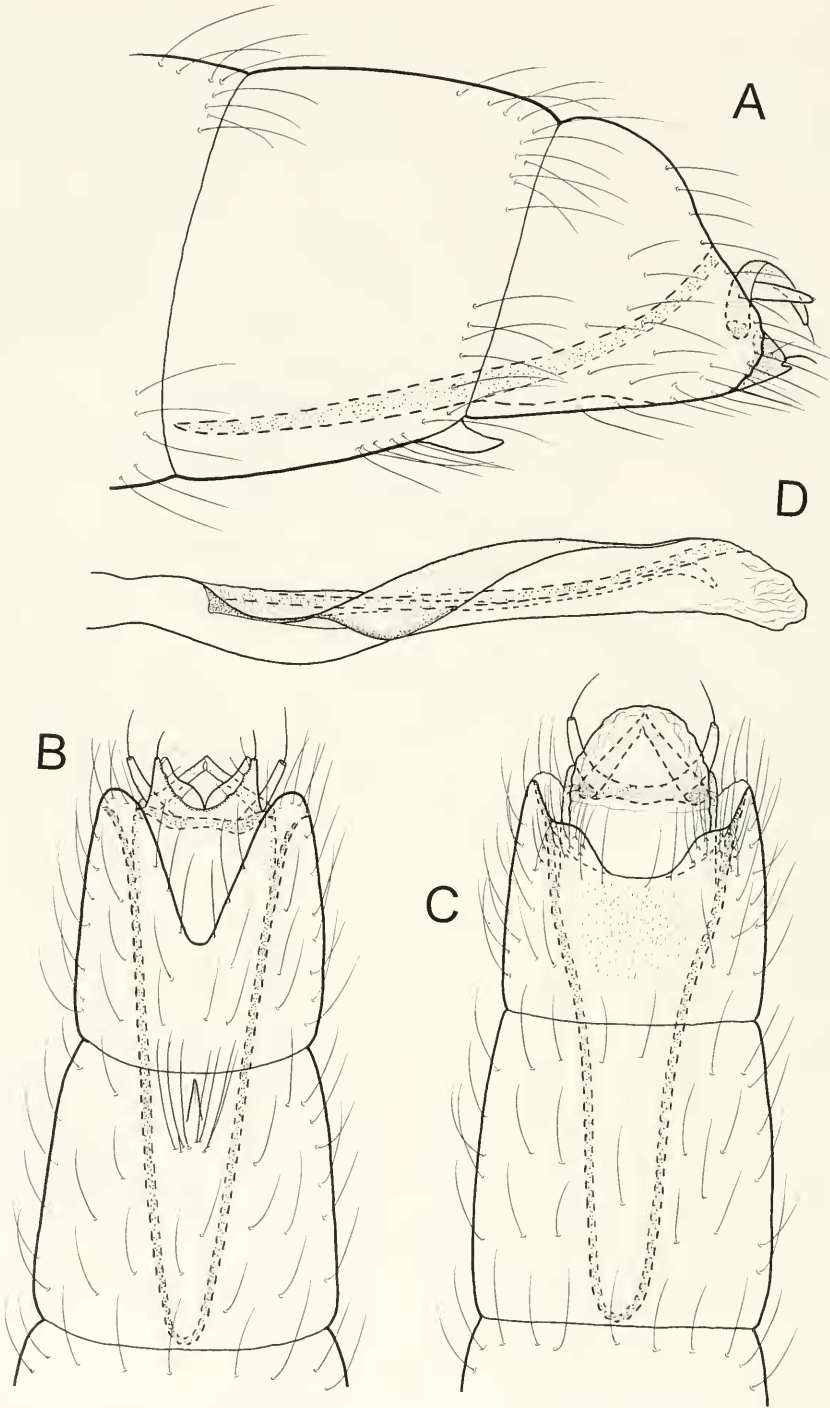


Fig. 6. *Oxyethira vaina*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, lateral.

***Oxyethira picita* Harris and Davenport,  
new species  
(Fig. 7)**

Diagnosis.—Although this species appears to be a member of the *Tanytrichia* subgenus of Kelley (1984), there is some resemblance to *O. zilaba* (Mosely) of the subgenus *Loxotrichia*. The new species is distinguished by the elongate subgenital plate and the pair of small lateral spines on the tenth tergite.

Male.—Length 2.3 mm. Antenna with 26 segments. Brown in alcohol. Abdominal segment VII annular with short posteromesal process from the venter. Segment VIII tapering posteroventrally to rounded apex, short process dorsolaterally; in ventral view deeply incised posteriorly; in dorsal view also deeply incised with three acute processes mesally. Segment IX extending anteriorly into segment VI, posteriorly short and reduced dorsally to thin process. Segment X lobate in lateral view; in dorsal view rectanguloid with rounded apex, pair of short spines posterolaterally. Inferior appendages in lateral view elongate and tapering posteriorly, apex with ventral spine and dorsal seta-bearing process; in ventral view fused posteriorly, apex with lateral seta-bearing processes and median truncate process, heavy seta between processes, lateral margins gently emarginate. Subgenital plate curving anteroventrally, posteriorly elongate and narrowing to acute apex, transverse bilobed process thin and elongate; in dorsal and ventral views divided at base into two elongate processes which narrow and cross apically, bilobed process thin, diverging distally. Phallus tubular, small lateral spines below midlength, widening apically, pair of lateral processes which are curved distally, ejaculatory duct between the two processes.

Female.—Unknown.

Type material.—Holotype, ♂. Peru, Loreto, edge of Rio Sucusari backwater, adjoining Explornapo Camp, 16 January 1993, L. J. Davenport (NMNH).

Etymology.—Spanish, small sharp point, referring to the small spines of the tenth tergite.

***Oxyethira hozosa* Harris and Davenport,  
new species  
(Fig. 8)**

Diagnosis.—This species is closely related to *O. scaeodactyla* Kelley, particularly in the structure of the phallus and the inferior appendages. The new species differs in the acute, distal point of the subgenital plate, the short bilobed process, and the more complete ninth segment.

Male.—Length 2.4 mm. Both antenna broken. Brown in alcohol. Abdominal segment VII annular with short, posteromesal process from the venter. Segment VIII rounded posteriorly in lateral view; in ventral view, deep mesal incision; emarginate dorsally. Segment IX tapering anteriorly, a narrow band posterodorsally, narrow process posteroventrally; ventrally with lateral margins produced into sharp points which extend beyond VIII, pair of fingerlike processes mesally; dorsally fused posteriorly with X. Segment X a short membranous lobe in lateral view; dorsally square in shape with posterior margin truncate. Inferior appendages short and truncate; in ventral view, incised mesally and fused, narrowing posterolaterally and bearing stout seta. Subgenital plate in lateral view strongly curving ventrad, apex with acute apical point; in ventral view wide with lateral edges rounded, mesally with knoblike process; bilobed processes short in lateral view; in ventral view widely separated and sinuate. Phallus short, distally narrowing to conspicuous hook, ejaculatory duct sinuate and enclosed within membranous lobe.

Female.—Unknown.

Type material.—Holotype, ♂. Peru, Loreto, Rio Yanamono just below Explorama Lodge, 10 January 1993, L. J. Davenport (NMNH).

Etymology.—Spanish, sicklelike, referring to the distinctive phallus.

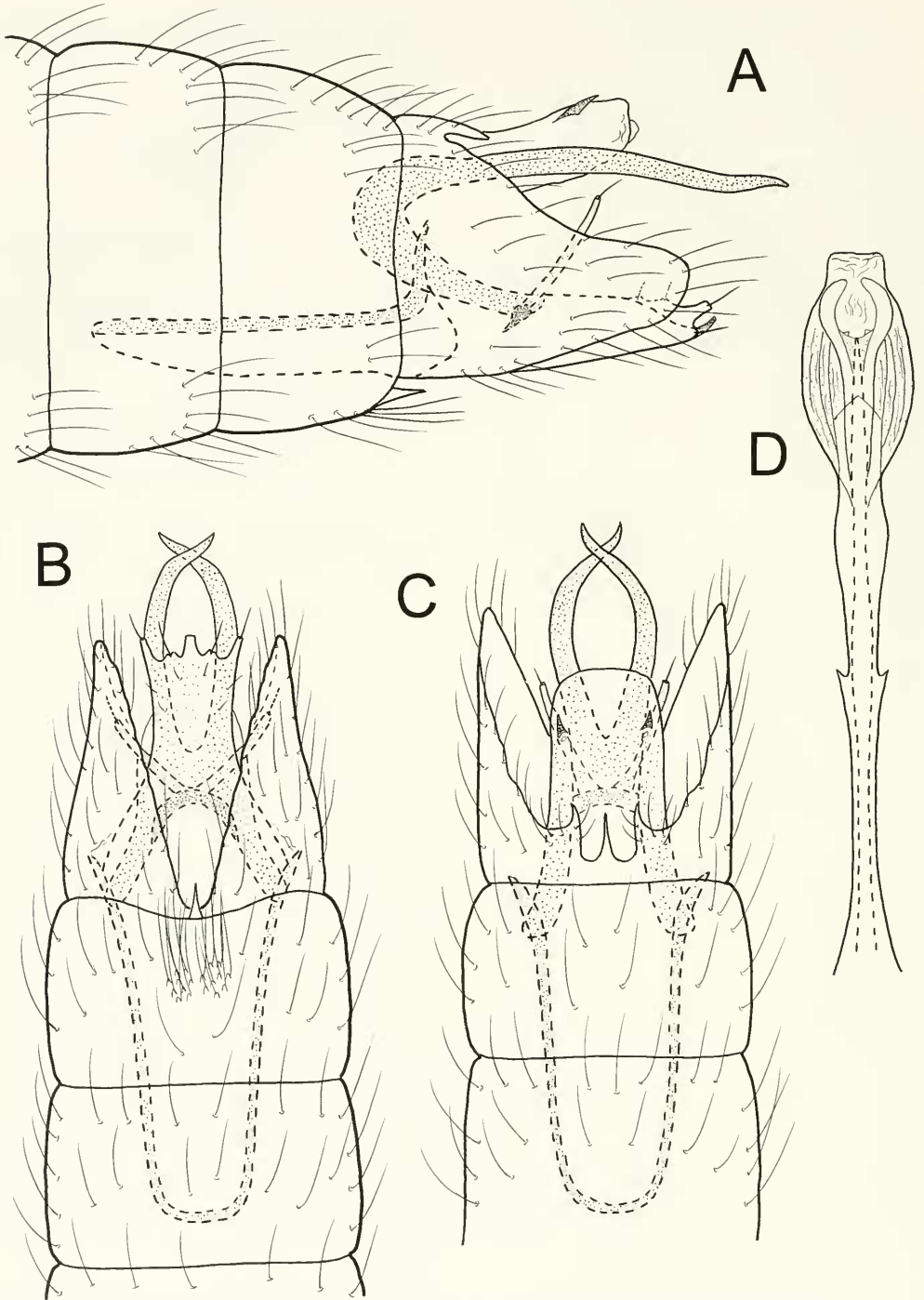


Fig. 7. *Oxyethira picita*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, dorsal.

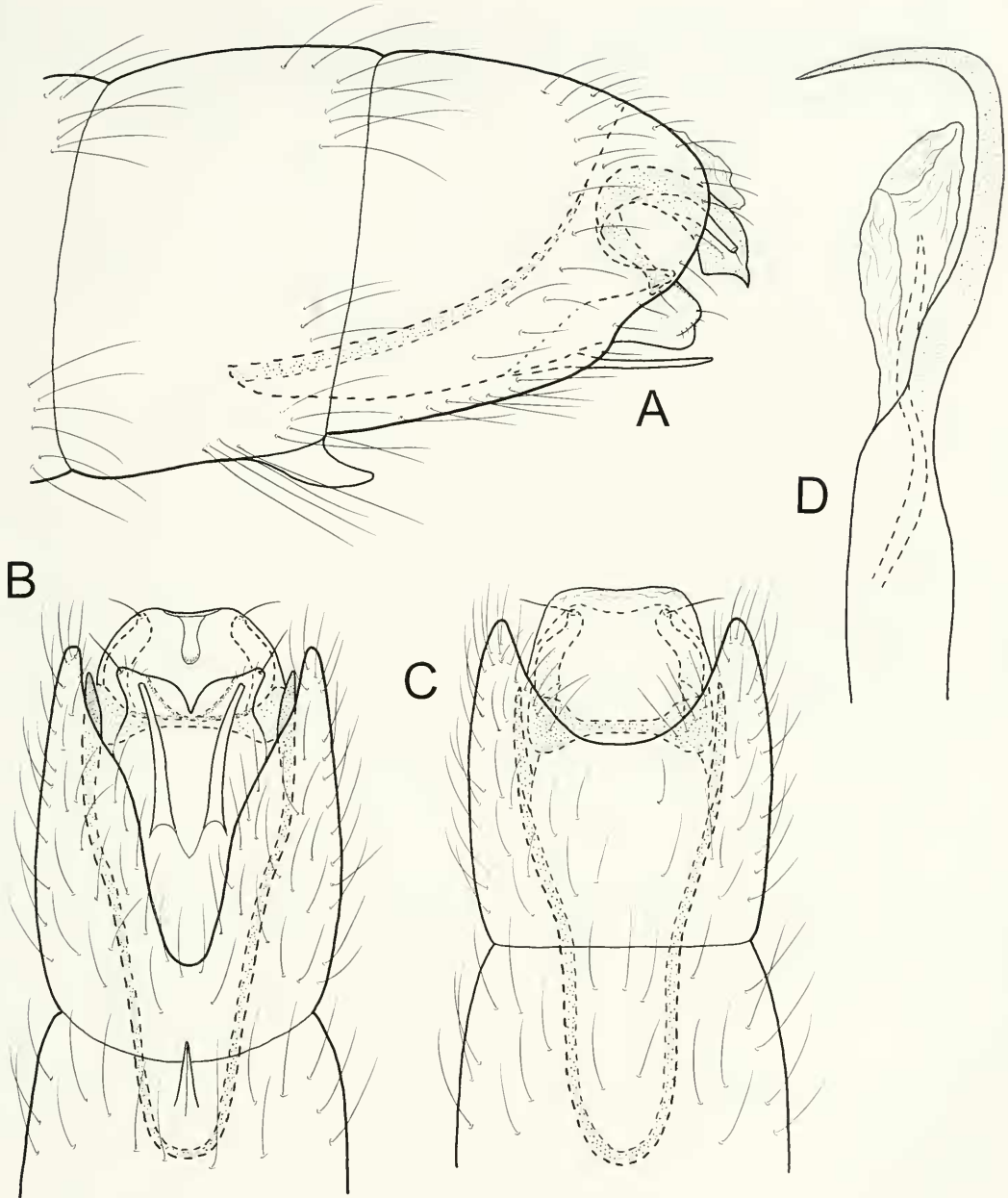


Fig. 8. *Oxyethira hozosa*, male genitalia. A, Lateral. B, Ventral. C, Dorsal. D, Phallus, dorsal.

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